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# Summary report on the technical analysis of the first biennial update report of Viet Nam submitted on 8 December 2014

In accordance with decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, should submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion.

Further, in accordance with paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties, commencing within six months of the submission of their first BURs. The process of ICA includes two steps: the technical analysis of the submitted BURs, followed by a workshop on the facilitative sharing of views under the Subsidiary Body for Implementation.

This summary report presents the results of the technical analysis of the first BUR of Viet Nam undertaken by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

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# I. Introduction and process overview

## A. Introduction

1. In accordance with decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, should submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, in accordance with paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties, commencing within six months of the submission of their first BURs. The process of ICA includes two steps: the technical analysis of the submitted BURs, resulting in a summary report for each BUR analysed, followed by a workshop on the facilitative sharing of views under the Subsidiary Body for Implementation.

2. This summary report presents the results of the technical analysis of the first BUR of Viet Nam undertaken by a team of technical experts (TTE) in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

## B. Process overview

3. Viet Nam submitted its first BUR on 8 December 2014.

4. The technical analysis of the BUR took place from 18 to 22 May 2015 in Bonn, Germany, and was undertaken by the following TTE drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Mr. Amnat Chidthaisong (Thailand), Ms. Ana-Maria Danila (Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) member from the European Commission), Ms. Lilian Portillo (former CGE member from Paraguay), Mr. Kiyoto Tanabe (Japan), Mr. Samir Tantawi (Egypt) and Ms. Songli Zhu (China). Ms. Danila and Ms. Zhu were the co-leads. Ms. Ruta Bubniene, Mr. Davor Vesligaj and Ms. Marion Vieweg-Mersmann (secretariat) provided administrative support to the TTE.

5. During the technical analysis, in addition to the written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR, the TTE and Viet Nam also engaged in discussion via videoconferencing, primarily to reach a common understanding on the identification of the capacity-building needs. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Viet Nam on 28 July 2015 for its review and comments. Viet Nam, in turn, provided its feedback on the draft summary report on 30 September 2015.

6. The TTE responded to and incorporated the comments referred to in paragraph 5 above from Viet Nam and finalized, in consultation with Viet Nam, the summary report on 26 October 2015.

# II. Technical analysis of information reported in the biennial update report

## A. Scope of the technical analysis

7. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of these actions, increase transparency of mitigation actions and their effects, and shall entail the following:

(a) Identification of the extent to which the elements of information listed in the ICA guidelines contained in decision 2/CP.17, annex IV, paragraph 3(a), are included in the BUR of the Party concerned (see chapter II.B);

(b) A technical analysis of the information contained in the BUR, specified in the "UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention" (hereinafter referred to as the UNFCCC reporting guidelines on BURs) contained in annex III to decision 2/CP.17, and any additional technical information provided by the Party concerned (see chapter II.C);

(c) Identification of, in consultation with the Party concerned, capacity-building needs related to the facilitation of reporting in accordance with annex III to decision 2/CP.17, and to the participation in ICA in accordance with annex IV to decision 2/CP.17, taking into account Article 4, paragraph 3, of the Convention (see chapter II.D).

8. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Viet Nam's BUR outlined in paragraph 7 above.

## B. Overview of the elements of information reported

9. The elements of information referred to in paragraph 7(a) above include: the national greenhouse gas (GHG) inventory report; mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and the progress made in their implementation; information on domestic measurement, reporting and verification (MRV); and support received.

10. Further, in accordance with decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE shall identify the extent to which the elements of information listed in the guidelines contained in decision 2/CP.17, annex IV, paragraph 3(a), are included in the BUR of the Party concerned. The results of this analysis are presented in tables 1, 2 and 3 below.

### 1. National greenhouse gas inventory

11. The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paragraph 41(g), and annex III, paragraphs 3–10, of the same decision. Further, as per decision 2/CP.17, annex III, paragraph 3, non-Annex I Parties should submit updates of national GHG inventories according to paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" (hereinafter referred to as the UNFCCC guidelines for the preparation of national communications from non-Annex I Parties) as contained in the annex to decision 17/CP.8. The scope of the updates on national GHG inventories should be consistent with

capacities, time constraints, data availabilities and the level of support provided by developed countries Parties for biennial update reporting.

12. Table 1 below presents results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Viet Nam in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 1
**Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Viet Nam**

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, paragraph 41(g) | The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available | Yes | The inventory year is 2010 |
| Decision 2/CP.17, annex III, paragraph 5 | The updates of the sections on the national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines for National GHG Inventories, the IPCC good practice guidance and Uncertainty Management in National GHG Inventories, and the IPCC good practice guidance for LULUCF; any change to the emission factor may be made in the subsequent full national communication | Partly | Updates of the activity data of the energy and industrial processes sectors are not provided in section 2 of the BUR. Some data are included in section 1, while activity data are provided in section 2 for the agriculture, LULUCF and waste sectors<br>Viet Nam uses the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF. In addition, Viet Nam has taken into account information published in the 2006 IPCC Guidelines |
| Decision 2/CP.17, annex III, paragraph 9 | The inventory section of the BUR should consist of a national inventory report as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including: | Partly | The BUR provides an update of the inventory section in the second national communication submitted in 2010, in which 2000 is the inventory year. A detailed national inventory report was provided during the technical analysis |
| | • Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors) | Partly | Most of the information is provided, but no data on international bunkers are provided in the BUR. During the technical analysis, data on aviation bunker fuel were provided by the Party<br>In the summary reporting table (table 2.18) of the BUR, emissions are presented in units of $CO_2$ eq, which is not exactly the same as those used in table 1. During the technical analysis, emissions in units of mass were provided by the Party |
| | • Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and $SF_6$) | No | Emissions from F-gases are not estimated, as indicated by use of the appropriate notation key ("NE") in a table similar to table 2 |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, annex III, paragraph 6 | Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR: | | |
| | • Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF | No | Tables contained in annex 3A.2 are not included in the BUR |
| | • The sectoral report tables annexed to the Revised 1996 IPCC Guidelines | Partly | In the BUR, subcategories in the energy sector and the industrial processes sector do not fully correspond with the sectoral report tables. In response to clarification sought by the TTE during the technical analysis, the Party provided further details in the national inventory report and additional Excel tables that correspond to the sectoral report tables |
| Decision 2/CP.17, annex III, paragraph 7 | Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in the previous national communications | Partly | Viet Nam has provided summary information at the sectoral level on emissions and removals for 1994, 2000 and 2010 |
| Decision 2/CP.17, annex III, paragraph 8 | Non-Annex I Parties that have previously reported on their national GHG inventories contained in their national communications are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000) | Yes | Summary information of the GHG inventories of 1994, 2000 and 2010 is provided in section 2.4.4 of the BUR |
| Decision 2/CP.17, annex III, paragraph 10 | Additional or supporting information, including sector-specific information, may be supplied in a technical annex | No | |
| Decision 17/CP.8, annex, paragraph 13 | Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved | Yes | In section 1.4 of the BUR, information on institutional arrangements for development of BURs and national communications is provided. In section 2.1 of the BUR, institutional arrangements for the GHG inventory development are provided |
| Decision 17/CP.8, annex, paragraph 14 | Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of the following gases, by sources and removals by sinks: | Partly | $CH_4$ and $N_2O$ emissions are reported in units of $CO_2$ eq, not in units of mass, except for emissions from the waste sector. In response to clarification sought by the TTE during the technical analysis, more data on units of mass were provided in additional Excel tables |
| | • $CO_2$ | Yes | $CO_2$ emissions are provided in the sectoral tables of different sections of the BUR and in summary table 2.18 |
| | • $CH_4$ | Partly | $CH_4$ emissions are reported in units of $CO_2$ eq, not in units of mass, except for |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | | | emissions from the waste sector |
| | • $N_2O$ | Partly | $N_2O$ emissions are reported in units of $CO_2$ eq, not in units of mass, except for emissions from the waste sector |
| Decision 17/CP.8, annex, paragraph 15 | Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of HFCs, PFCs and $SF_6$ | Yes | Emissions from F-gases are reported as not estimated |
| Decision 17/CP.8, annex, paragraph 19 | Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories: | | |
| | • International aviation | No | Emissions from international aviation are not reported. However, during the technical analysis, data on aviation bunker fuel were provided by the Party |
| | • Marine bunker fuels | No | Emissions from marine bunker fuels are not reported |
| Decision 17/CP.8, annex, paragraph 16 | Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs such as: | | |
| | • CO | No | CO emissions are not included in the BUR. During the technical analysis, emissions of CO were provided as additional information |
| | • $NO_x$ | No | $NO_x$ emissions are not included in the BUR. During the technical analysis, emissions of $NO_x$ were provided as additional information |
| | • NMVOCs | No | NMVOC emissions are not included in the BUR. During the technical analysis, emissions of NMVOCs were provided as additional information |
| Decision 17/CP.8, annex, paragraph 17 | Other gases not controlled by the Montreal Protocol, such as $SO_x$, included in the Revised 1996 IPCC Guidelines, may be included at the discretion of the Parties | No | During the technical analysis, emission estimates of $SO_2$ were provided as additional information |
| Decision 17/CP.8, annex, paragraph 21 | Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or | | |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | sink categories, methodologies, emission factors and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building: | | |
| | • Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol | Partly | Section 2.2 of the BUR provides relevant information without reporting GWPs used, which was clarified during the technical analysis; the tier 2 methodology used is not clearly reported |
| | • Explanation of the sources of emission factors | Partly | In response to clarification sought by the TTE during the technical analysis, the Party provided a national inventory report that includes the sources of emission factors. Most emission factors used in the inventory are IPCC default factors; some are country-specific emission factors such as those used for fugitive emissions from coal production, manure management, continuously flooded paddy fields without organic amendments, living biomass in forest and woody grassland, and solid waste disposal |
| | • Explanation of the sources of activity data | Yes | |
| | • If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:<br>o Source and/or sink categories<br>o Methodologies<br>o Emission factors<br>o Activity data | NA | The Revised 1996 IPCC Guidelines were used |
| | • Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building | No | Information is discussed in the national inventory report provided in response to clarification sought by the TTE during the technical analysis |
| Decision 17/CP.8, annex, paragraph 24 | Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties: | | |
| | • Level of uncertainty associated with inventory data | No | No uncertainly analysis was provided in the BUR. In response to clarification |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | | | sought by the TTE during the technical analysis, the Party provided a national inventory report that includes the uncertainty analysis |
| | • Underlying assumptions | No | No uncertainly analysis was provided in the BUR. In response to clarification sought by the TTE during the technical analysis, the Party provided a national inventory report that includes the underlying assumptions of the uncertainty analysis |
| | • Methodologies used, if any, for estimating these uncertainties | No | No uncertainly analysis was provided in the BUR. The national inventory report provided during the technical analysis specifies that a tier 1 uncertainty assessment was conducted in line with the IPCC good practice guidance and the IPCC good practice guidance for LULUCF |

*Abbreviations*: BUR = biennial update report, $CO_2$ eq = carbon dioxide equivalent, F-gas = fluorinated gas, GHG = greenhouse gas, GWP = global warming potential, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, LULUCF = land use, land-use change and forestry, NA = not applicable, "NE" = not estimated, NMVOC = non-methane volatile organic compound, Revised 1996 IPCC Guidelines = *Revised 1996 Guidelines for National Greenhouse Gas Inventories*, TTE = team of technical experts, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

## 2. Mitigation actions and their effects

13. The parts of the UNFCCC reporting guidelines on BURs on reporting information on mitigation actions in the BUR are contained in decision 2/CP.17, annex III, paragraphs 11–13.

14. Viet Nam did report mitigation actions in its first BUR, which are, as indicated in the BUR, mostly planned activities and options. The mitigation actions reported are not provided in tabular format, but information on assumptions and expected emission outcomes is provided in tabular format.

15. Table 2 below presents results of the identification of the extent to which the elements of information on mitigation actions are included in the first BUR of Viet Nam in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 2
**Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of Viet Nam**

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, annex III, paragraph 12 | For each mitigation action or groups of mitigation actions including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information to the extent possible: | | |
| (a) | Name and description of the mitigation action, | Partly | Information on the name |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators | | and description is included in the BUR. Most mitigation actions reported are not yet at a stage where progress indicators have been defined. In response to clarification sought by the TTE during the technical analysis, the Party provided additional information on the coverage, quantitative goals and progress indicators for two NAMAs under preparation |
| (b) | Information on methodologies and assumptions: | | |
| | • Methodologies | Partly | No information on methodologies used for BAU projections is reported in the BUR. In response to clarification sought by the TTE during the technical analysis, the Party provided the methodologies used for BAU projections. For the quantification of reported mitigation options in the energy sector, the LEAP model was used |
| | • Assumptions | Partly | Some information on assumptions is included in the BUR. In response to clarification sought by the TTE during the technical analysis, the Party provided additional information |
| (c) | Objectives of the action and steps taken or envisaged to achieve that action: | | |
| | • Objectives of the action | Yes | |
| | • Steps taken or envisaged to achieve that action | Partly | Steps envisaged are collectively reported as "proposed outcomes and activities" in the BUR |
| (d) | Information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible: | | |
| | • Progress of implementation of the mitigation actions | Yes | Developments on NAMA readiness and proposals are provided, but implementation of the mitigation actions has not yet started |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| | • Underlying steps taken or envisaged | Partly | Policy and legal frameworks at the national level are reported. Some steps envisaged are also provided, but without a clear timeline |
| | • Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible | Partly | Expected potential emission reductions are provided. Results achieved under the CDM and the joint crediting mechanism are reported |
| (e) | Information on international market mechanisms | Yes | A list of CDM projects is provided |
| Decision 2/CP.17, annex III, paragraph 13 | Parties should provide information on the description of domestic measurement, reporting and verification arrangements | Yes | Proposed institutional arrangements for national and sectoral measurement, reporting and verification systems are provided |

*Abbreviations:* BAU = 'business as usual', BUR = biennial update report, CDM = clean development mechanism, LEAP = long-range energy alternatives planning system, NAMA = nationally appropriate mitigation action, TTE = team of technical experts.

### 3. Finance, technology and capacity-building needs and support received

16. The parts of the UNFCCC reporting guidelines on BURs on reporting information on finance, technology and capacity-building needs and support received in the BUR are contained in decision 2/CP.17, annex III, paragraphs 14–16.

17. Table 3 below presents results of the identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the BUR of Viet Nam in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 3
**Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of Viet Nam**

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, annex III, paragraph 14 | Non-Annex I Parties should provide updated information on constraints and gaps, and related financial, technical and capacity-building needs: | Yes | |
| | • Constraints and gaps | Yes | |
| | • Related financial, technical and capacity-building needs | Yes | |

| *Decision* | *Reporting requirements* | *Yes/ Partly/No* | *Comments on the extent of the information provided* |
|---|---|---|---|
| Decision 2/CP.17, annex III, paragraph 15 | Non-Annex I Parties should also provide updated information on financial resources, technology transfer, capacity-building and technical support received from the GEF, Annex II Parties and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR | Yes | |
| Decision 2/CP.17, annex III, paragraph 16 | With regard to the development and transfer of technology, non-Annex I Parties should provide information on technology needs, which must be nationally determined, and technology support received: | Yes | |
| | • Technology needs, which must be nationally determined | Yes | |
| | • Technology support received | Partly | The information provided is general on the support received for climate change activities. There is no specific mention of the technology support received |

*Abbreviations*: BUR = biennial update report, GCF = Green Climate Fund, GEF = Global Environment Facility.

## C. Technical analysis of the information reported

18. The technical analysis referred to in paragraph 7(b) above aims to, without engaging in discussion on the appropriateness of these actions, increase transparency of mitigation actions and their effects. Accordingly, the technical analysis focused on the transparency of information reported in BURs.

19. In addition to covering the information in the BUR and any additional technical information provided by the Party concerned, the technical analysis also focused, in relation to information reported on national GHG inventories, on the consistency of the methods used for developing those inventories with the appropriate methods developed by the Intergovernmental Panel on Climate Change (IPCC) and referred to in the UNFCCC reporting guidelines on BURs. The results of the technical analysis are presented in the remainder of the chapter.

### 1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

20. As per the scope defined in decision 2/CP.17, annex III, paragraph 2, the BURs should provide an update to information contained in the most recently submitted national communications, including among other things, information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis. For national communications, non-Annex I Parties report national circumstances following reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5.

21. In accordance with decision 17/CP.8, annex, paragraph 3, Viet Nam, in its BUR, reported the following information on national circumstances: geographical profile, climate, economic profile, energy sector and steps taken to approach sustainable development and climate change.

22. Viet Nam is vulnerable to climate change, in particular, to expected sea level rise. According to the report of the Ministry of Natural Resources and Environment, entitled *Climate Change, Sea Level Rise Scenarios for Viet Nam*,[1] in the medium emissions scenario, annual mean temperature and rainfall may increase by 2–3 °C and 2–7 per cent, respectively, and the average sea level may rise by 57–73 cm.

23. As encouraged in decision 17/CP.8, annex, paragraph 4, Viet Nam provided a summary of relevant information regarding its national circumstances in tabular format. This information transparently describes national circumstances, in particular, the geography, climate conditions and scenarios, water resources, environment, population, agriculture, forestry, industry, transportation, energy and economic growth of Viet Nam.

24. Over the last decade, Viet Nam's economy has been growing constantly. Between 2008 and 2012, the gross domestic product per capita (constant 2010 prices) increased by USD 1,168 to approximately USD 1,200.[2] Energy and agriculture contributed most to the economic development of the country, which affected the GHG inventory. In 2010, total emissions of GHGs in Viet Nam were 266 million tonnes of carbon dioxide equivalent (Mt $CO_2$ eq). GHG emissions were mainly from the energy sector (53.1 per cent) followed by the agriculture sector (33.2 per cent), while emissions from the industrial processes and waste sectors were about 8.0 and 5.8 per cent, respectively.

25. In 2012, petroleum was the predominant fuel source, followed by non-commercial energy, coal, electricity and gas; about 80 per cent of energy consumption in mountainous areas was from biomass such as wood, rice husk and biogas. The total end-use energy consumption by types of fuel increased from 43,202 ktoe in 2008 to 47,873 ktoe in 2012.

26. Viet Nam has made significant achievements in all areas of sustainable development, including socioeconomic development and environmental protection. Viet Nam has reported that it achieved middle-income status, and has reached a number of Millennium Development Goals, in particular, to eradicate extreme hunger and poverty. A Sustainable Development Strategy was approved in 2012. The human development index has improved over the years.

27. Viet Nam has established a number of institutions and approved a set of strategies, plans and actions to coordinate and implement its response to climate change. The institutions include: the National Steering Committee for UNFCCC and Kyoto Protocol (2007), the National Climate Change Committee (2012) and the Ministry of Natural Resources and Environment (MONRE) as the coordinator with line ministries and the agencies involved in preparation of the national GHG inventory.

28. Viet Nam, in its BUR, described institutional arrangements relevant to the preparation of national communications and BURs on a continuous basis. The description covers key aspects of the institutional arrangements such as: legal status, roles and responsibilities of the overall coordinating entity, involvement and roles of other institutions and experts, mechanisms for information/data exchange, quality assurance/quality control procedures, and provisions for public consultation and other forms of stakeholder engagement.

29. Viet Nam is also conducting research on the establishment of a national GHG inventory system and a domestic MRV system at national and sectoral levels by 2016 in order to meet the requirements of the national GHG inventory and GHG emission management, including development of country-specific emission factors.

[1] Available at <http://www.preventionweb.net/files/11348_ClimateChangeSeaLevelScenariosforVi.pdf>.

[2] The gross domestic product at constant 2010 prices by economic sector increased gradually from 1,923,749 billion to 2,412,778 billion dong during the period 2008–2012.

30. The BUR specifies GHG emission projections that cover the energy, agriculture, land use, land-use change and forestry (LULUCF) and waste sectors. The projections are based on a medium economic growth scenario. Projected GHG emissions are 466 and 760.5 Mt $CO_2$ eq in 2020 and 2030, respectively. The energy sector is the largest contributor to GHG emission growth in the long-term emission projections. The LULUCF sector is expected to continue its current trend as a sink and to moderately increase removals.

31. With regard to mitigation, Viet Nam is taking actions to establish institutional arrangements for nationally appropriate mitigation actions (NAMAs). The Department of Meteorology, Hydrology and Climate Change under MONRE is the national focal point for NAMAs and for the clean development mechanism (CDM). As of June 2014, Viet Nam was ranked fourth in the world in terms of number of CDM projects registered, with 253 registered CDM projects and 11 programmes of activities with 10,068,987 certified emission reductions.

32. In addition to the capacity needs and the finance, technology and capacity-building needs outlined in the BUR, Viet Nam agreed that further enhancing the technical capacity of and coordination among the institutions involved in preparing the BUR (e.g. MONRE) is important to ensure that BURs are produced on a continuous basis. Viet Nam informed the TTE that institutional arrangements for the first BUR can be applied for the next BURs, and preparation of BURs on a continuous basis is guaranteed with international financial support.

33. The information reported and additionally provided during the technical analysis transparently and comprehensively describes the institutional arrangements of Viet Nam and also demonstrates that the arrangements are able to meet the requirements of the preparation of national communications and BURs on a continuous basis.

### 2. National greenhouse gas emissions by sources and removals by sinks

34. Viet Nam reported, in its BUR, information on national GHG inventories covering GHG emissions and removals for the year 2010, as an update to section II of the second national communication submitted in 2010, in which the inventory year was 2000, using the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines), *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC good practice guidance) and *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (hereinafter referred to as the IPCC good practice guidance for LULUCF). The reported GHG inventory covered only the following gases: carbon dioxide ($CO_2$), methane ($CH_4$) and nitrous oxide ($N_2O$). During the technical analysis, the Party provided additional information on emissions, for 2010, of indirect GHGs (carbon monoxide, nitrogen oxides and non-methane volatile organic compounds) and sulphur dioxide.

35. Viet Nam also provided additional information on the activity data, emission factors and methodologies used for the preparation of the GHG inventory, which further enhanced the transparency of the national GHG inventory reported in the BUR.

36. Total GHG emissions, excluding removals from LULUCF, increased by 95.9 per cent between 2000 and 2010. This was mainly attributed to $CO_2$ emissions, which increased by 161 per cent over this period. Total GHG emissions, including from LULUCF, increased by 63.6 per cent over this period.

37. Viet Nam has used the IPCC good practice guidance and the IPCC good practice guidance for LULUCF in addition to the Revised 1996 IPCC Guidelines. Key categories

have been reported for the first time. The TTE notes this progress, which will contribute to a better understanding of the national GHG inventory of Viet Nam.

38. Compared with the GHG inventory of 2000, two significant changes can be observed in the 2010 inventory: the main emissions source has changed from agriculture to energy activities, and the gas that contributes the most emissions is now $CO_2$, instead of $CH_4$ previously. The TTE believes the described changes over time provide meaningful insights for a better understanding of the Party's national circumstances.

39. Key category analysis was first reported, which is listed in tables 2.2 and 2.3 of the BUR. During consultation with the Party in the technical analysis, it was clarified that a tier 2 methodology was applied for fugitive emissions from coal production, manure management, continuously flooded paddy fields without organic amendments, living biomass in forest and woody grassland, and solid waste disposal, while a tier 1 methodology was used for the other categories, including the remaining key categories. The TTE commends the Party for using the tier 2 methodology for these key categories. The Party acknowledged that the following key categories need to be upgraded to a higher-tier methodology by making efforts to identify country-specific emission factors and/or activity data sources: fuel combustion of anthracite coal ($CO_2$ emissions), cement/clinker production ($CO_2$ emissions), enteric fermentation ($CH_4$ emissions), manure management ($CH_4$ emissions), rice cultivation ($CH_4$ emissions) and field burning of agricultural residues ($CH_4$ emissions).

40. The TTE observed that updates of activity data were reported in the BUR for the agriculture, LULUCF and waste sectors. During the technical analysis, the Party provided additional information, through sectoral working sheets and a detailed national inventory report, covering activity data in the energy and industrial processes sectors. The TTE notes that the transparency of the inventory would be enhanced if such information is included in future BURs.

41. Viet Nam reported GHG emissions in units of carbon dioxide equivalent, but not in units of mass, except for the waste sector. The global warming potentials used are not reported. During consultation with the Party, $CH_4$ and $N_2O$ emissions from the energy sector were provided on a gas-by-gas basis in units of mass. In addition, it was clarified that Viet Nam used the global warming potentials provided by the IPCC in its Second Assessment Report based on the effects of GHG emissions over a 100 year time-horizon. The TTE considers that it would enhance the transparency of the national GHG inventory if Viet Nam provided information on emissions/removals on a gas-by-gas basis and in units of mass, as encouraged by the UNFCCC guidelines for the preparation of national communications from non-Annex I Parties.

42. The TTE noted that Viet Nam did not provide information on the estimation of $CO_2$ emissions from fuel combustion using the reference approach. During the technical analysis, Viet Nam provided additional information on the reference approach and its comparison with the sectoral approach, as encouraged by decision 17/CP.8, annex, paragraph 18. The TTE notes that this information would enhance the transparency of the inventory for the energy sector in the next BUR.

43. The TTE noted the provision of summary information tables of inventories for previous submission years, namely 1994 and 2000. The consistency of the inventories is not discussed in the BUR. The TTE, for example, noted that $N_2O$ emissions from the waste sector in 2000 decreased compared with emissions in 1994, and rebounded in 2010, as shown in table 2.20 of the BUR. A similar trend can be found for $N_2O$ emissions from energy activities. During the technical analysis, the Party clarified that recalculation could be conducted in the future to develop a consistent time series of GHG emissions.

44. The TTE also noted that emissions of hydrofluorocarbons/perfluorocarbons/sulphur hexafluoride and GHGs from international bunker fuels are not presented in the BUR. During the technical analysis, Viet Nam acknowledged that information systems for fluorinated gases (F-gases) and international marine bunkers need further capacity-building to enable future reporting.

45. The TTE observed that uncertainty analysis for the GHG inventory is not presented in the BUR. The national inventory report states that a tier 1 methodology was used to analyse the overall and sector uncertainties. The Party acknowledged that capacity-building is necessary to improve uncertainty analysis in the next inventory cycles.

46. Viet Nam reported emissions on a sector-by-sector basis, namely for the energy, industrial processes, agriculture, LULUCF and waste sectors. In 2010, the energy sector was the most significant source of emissions, with a share of 57.2 per cent of the total emissions including LULUCF, whereas in 2000, the agriculture sector was the most significant source; the LULUCF sector changed from an emissions source in 2000 to a sink in 2010.

47. In the industrial processes sector, the TTE noted that emissions from only cement and lime production are explicitly estimated, as mentioned in section 2.4.2 of the BUR. All GHG emissions from other subcategories such as ammonia production, carbide production, and iron and steel production have been allocated to the energy sector. As the Revised 1996 IPCC Guidelines indicate, fossil fuels used as feedstock in ammonia production presents a significant non-energy industrial source of $CO_2$ emissions; the IPCC good practice guidance indicates emissions from fossil fuels used as reductants are considered to be industrial process emissions, and they should be preferably reported as such. The transparency of the GHG inventory would benefit from allocation of the relevant emissions to the industrial processes sector if data availability allows the allocation.

48. In the LULUCF sector, forest land remaining forest land ($CO_2$ emissions), cropland remaining cropland ($CO_2$ emissions), land converted to other land ($CO_2$ emissions), land converted to settlements ($CO_2$ emissions) and grassland remaining grassland ($CO_2$ emissions) are identified as key categories. The TTE noticed that the notation key "IE" (included elsewhere) is used for the subcategory land converted to forest land, but no explanation is given about where those emissions are included. During the technical analysis, the Party clarified that those emissions are included in the subcategory forest land remaining forest land. This information is also included in the national inventory report submitted during the technical analysis.

49. In the waste sector, domestic wastewater is one of the key categories. Emissions from this subsector are higher than emissions from solid waste landfills, as presented in table 2.17 and figure 2.5 of the BUR. During the consultation, Viet Nam explained that this was mainly caused by a high number of septic systems. Taking into consideration this national circumstance, the TTE noted that the Party would benefit from capacity-building to improve estimation of emissions from wastewater treatment in particular.

### 3. Mitigation actions and their effects, including associated methodologies and assumptions

50. As reported under national circumstances, Viet Nam has been diversifying its energy sources and promoting energy saving and efficiency. To preserve natural resources, Viet Nam is promoting renewable energy. An abundance of rivers and the geographical location of Viet Nam create a potential for the use of renewable energy sources such as hydropower and solar power. The National Green Growth Strategy from 2012 and the Law on Energy Efficiency and Conservations from 2010 constitute mitigation actions taken at a strategy and policy level, even though they are not reported under the heading of mitigation actions.

The TTE commends Viet Nam for these initiatives, and notes that additional details on relevant strategies, policies, laws and action plans would enhance the transparency of reporting on mitigation actions.

51. As indicated in table 2 above, Viet Nam reported, in its BUR section on mitigation actions, information on planned mitigation actions, including progress on developing mitigation activities and options in the BUR. The TTE observed that Viet Nam has demonstrated progress towards the implementation of planned mitigation actions. Key progress includes the establishment of a policy and legal framework and the assignment of the institutions and working groups responsible for the implementation of mitigation actions, the establishment of a plan on management of GHG emissions at the sectoral level and the development of the National Green Growth Strategy. In the course of consultation during the technical analysis, Viet Nam communicated its national target for emission intensity reduction by 2020 to be 8–10 per cent below the 2010 level. NAMAs that are being developed or intended to be developed aim to achieve this goal.

52. Three NAMA projects are reported. Two of these, targeting electricity generation from wind power and biogas, are still under development, and one, aiming to establish a Renewable Energy Development Facility, was submitted to the NAMA Facility, but was not successful in registration. These NAMAs are the results of Viet Nam's efforts to establish an enabling environment for mitigation actions. In addition to this, Viet Nam reported in its BUR that several preparatory activities for other NAMAs have been conducted and that a number of NAMA proposals are currently being developed by relevant agencies. As the capacity of the ministries and agencies involved in the development of NAMAs and for monitoring and evaluating GHG mitigation is still limited, the TTE and Viet Nam agree that capacity-building in this area is highly required. The specific capacity-building needs include the preparation of NAMA proposals, the identification of methodologies, the definition of assumptions and steps to be taken for the mitigation actions, the quantification of results to be achieved and the identification of progress indicators of mitigation actions.

53. At the national level, 11 mitigation options have been analysed for GHG emission reduction in the three largest emission sectors: 6 options in the energy sector, 2 in the agriculture sector and 3 in the LULUCF sector. The total GHG mitigation potential of the 11 options in these three sectors is 1,040.9 Mt $CO_2$ eq. The long-range energy alternatives planning system (LEAP) model was used to develop mitigation options and to estimate their potential effects in the energy sector. Some assumptions for the calculations are provided in the BUR, and additional information on assumptions was provided in response to clarification sought by the TTE during the technical analysis. The TTE noted that the transparency of reporting would be enhanced if the Party provided all information on assumptions in its next BUR.

54. Viet Nam reported the study results of potential mitigation options and their technical mitigation potential. In consultation with Viet Nam, the TTE identified the need for capacity-building related to the identification of the feasibility of the mitigation options quantified in the modelling studies, bringing them into practice under the mitigation policy framework of the country, and reporting them in a transparent manner in the BUR.

55. On the regional level, Viet Nam is in the process of negotiating with Japan to issue guidelines to implement the joint crediting mechanism (JCM) in Viet Nam. Currently, there are 28 JCM projects in the feasibility study stage, with potential emission reductions of about 10 Mt $CO_2$ eq.

56. Viet Nam reported, in tabular format, 253 CDM projects and 11 programmes of activities registered. Since the last update in the second national communication in 2010, 219 new CDM projects have been registered. This makes Viet Nam one of the leading

countries in terms of number of CDM projects registered, and reflects the country's policy on its involvement in international market mechanisms. As of June 2014, a total of 10,068,987 certified emission reductions were issued by the Executive Board of the CDM related to projects in Viet Nam. The majority of these projects are in the energy sector (88 per cent of the total number of projects). In consultation with Viet Nam, the TTE identified capacity-building needs related to refining the methodology of projection development by analysing the linkages and disaggregating the effects from NAMAs/mitigation actions and the effects of CDM and JCM projects.

### 4. Constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received

57. In its first BUR, Viet Nam reports well-structured and detailed information on constraints and gaps related to the development of its national GHG inventory, implementation of its NAMAs and the application of climate change mitigation technologies in various sectors. Viet Nam acknowledges that there are insufficient domestic legal and institutional arrangements, as well as a lack of technical expertise and financial support for preparation of the GHG inventory on a continuous basis. Development partner funding from official development assistance for responding to climate change accounted for 31 per cent of the total funding. Of the funding received between 2004 and 2013, 97 per cent was from loans. Viet Nam also acknowledges challenges in developing and implementing climate change mitigation technologies in Viet Nam, entailing policy level support, research and development, financing, transfer of technologies and effective MRV of mitigation actions.

58. In 2013, the total investment in climate-related activities amounted to 3,829 billion dong (VND), of which 3.9 per cent was spent on the implementation of mitigation activities, 89.1 per cent on adaptation and 7.0 per cent on combined adaptation and mitigation. Viet Nam has received support for the implementation of the Support Program to Respond to Climate Change activities through bilateral and multilateral sources. The total investment for mitigation increased between 2010 and 2013, but there is still a considerable difference compared to the investment in adaptation activities.

59. In the National Target Program to Respond to Climate Change, for the period 2012–2015, Viet Nam identified three priority climate-related component projects for financing: assessment of climate change and sea level rise; development and implementation of action plans to respond to climate change; and capacity-building, communication, monitoring and evaluating the programme implementation. Viet Nam plans to implement these activities using the international support provided and means from the national budget.

60. Out of 400 climate change projects, 62 were selected for priority implementation with a total funding requirement of VND 20,527 billion. In 2014, 16 projects were funded, with a total budget of VND 916 billion, meeting only 21 per cent of the total funding needed for the implementation of these projects and 4.4 per cent of the funding approved for the 62 projects that were prioritized. The projects are related to climate change adaptation, including the renovation and building of new dikes and embankments as protection against flooding and erosion.

61. In 2012, Viet Nam conducted a comprehensive technology needs assessment, which resulted in the identification of priority climate change adaptation and mitigation technologies in three sectors: energy, agriculture and LULUCF. This assessment provided a sound basis for continuing work on removing gaps and creating an enabling environment for the transfer of technologies.

62. Viet Nam has, in its BUR, identified the key capacity-building needs in relation to commitments under the Convention that include: coordination activities to ensure the

implementation of the Convention at the national level; development and implementation of actions plans to respond to climate change at the local level; early warning and disaster prevention; climate change reporting on a continuous basis; and country-specific emission factors.

63. The development of the first BUR was funded by national budget resources, as a provision of the national government.

### 5. Domestic measurement, reporting and verification

64. By 2016, Viet Nam plans to establish an MRV system at national and sectoral levels to meet the requirements of the national GHG inventory and GHG emission management, including the development of country-specific emission factors. In the next phase, the systems will be expanded to monitor GHG emissions sources and to meet the requirements on providing data for GHG inventories and preparing periodic reports.

65. In the proposed structure for the MRV system, the National Climate Change Committee is mandated to develop and modify the guidelines and regulations necessary to implement mitigation actions, including: development of methodologies; implementation of measurement, monitoring and evaluation of programmes and projects on mitigation of GHG emissions; and verification of quantified GHG emission reductions or enhancements of carbon sinks.

66. The BUR describes the proposed institutional arrangements for a national and sectoral MRV system, but it is not mentioned when this MRV system is expected to be operational. However, the development of guidelines and regulations necessary to implement mitigation actions is reported as an important target during this initial step.

67. The MRV system will enable the Party to: facilitate application of advanced technologies, products, services and infrastructures for low-carbon development, as well as implement mitigation actions and contribute to the sustainable development of the country; assess the contribution of GHG emission reductions and enhancement of carbon sinks of an economic sector or the whole country; and implement the Convention objectives through GHG emission reductions and enhancements of carbon sinks.

68. Viet Nam indicates, in its BUR, that national and sectoral policies to develop and implement NAMAs and an MRV system are inadequate on both national and sectoral levels. Viet Nam clarified that a national and sectoral MRV system will be established to serve the requirements of national GHG inventories and GHG emission monitoring and to facilitate NAMAs (decision no.1775/QD-TTg, dated 21 November 2012).

### 6. Any other information

69. Viet Nam reported information on the preparation of three NAMAs projects, as well as a list of registered CDM projects in the BUR appendices, as described in chapter II.C.3 above.

## D. Identification of capacity-building needs

70. In consultation with Viet Nam, the TTE identified the following capacity-building needs related to the facilitation of the preparation of subsequent BURs and participation in ICA:

(a) Enhancing the technical capacity of and coordination among the institutions involved in preparing the BUR (e.g. MONRE) to ensure the development of BURs on a continuous basis;

(b) Improving the inventory system by collecting biennial activity data, which allows the development of the GHG inventory for the entire time series;

(c) Improving the reporting transparency by elaborating in future BURs, for example, methodologies used for emission estimates for key categories, updating activity data for the most recent available inventory years, using sectoral reporting tables provided in the Revised 1996 IPCC Guidelines and providing non-$CO_2$ emissions in units of mass;

(d) Developing more country-specific emission factors and identifying more activity data sources for key categories, for example: fuel combustion of anthracite coal (1A), clinker/cement production (2A1), enteric fermentation (4A), manure management (4B), rice cultivation (4C) and field burning of agricultural residues (4F), in order to increase the accuracy of reporting by using higher-tier methodologies in the estimation of GHG emissions;

(e) Conducting and reporting uncertainty analysis;

(f) Improving the completeness of the GHG inventory by:

(i) Collecting activity data and estimating emissions of F-gases in order to develop an inventory for these gases, using a tier 1 methodology as a first step;

(ii) Developing methodologies to estimate emissions from bunker fuels and disaggregating fuel used for domestic and international purposes in aviation and navigation activities in order to estimate emissions for international bunkers;

(iii) Collecting activity data and estimating emissions from the industrial processes sector;

(g) Identifying the feasibility of mitigation options stemming from modelling studies;

(h) Measuring and quantifying the effects and defining the progress of implementation of mitigation actions and the underlying steps taken or envisaged, and the results achieved from key actions;

(i) Refining the methodology of projection development by analysing the linkages and disaggregating the effects from NAMAs/mitigation actions and the effects of CDM projects.

# III. Conclusions

71. The TTE concludes that:

(a) Most of the elements of information listed in paragraph 3(a) of the ICA guidelines are included in the first BUR of Viet Nam;

(b) Viet Nam provides the 2010 GHG inventory by sector and by gas together with summary information tables of inventories for previous submission years in section 2 of the BUR. This section is well structured and contains substantial information to reflect the emission profile of the Party. The TTE commends the considerable progress made in improving the process for national GHG inventory preparation and the updating of the methodology used in the estimation, which are highlighted in paragraph 38 above. Meanwhile, the TTE also notes that the reporting would be further enhanced in transparency, completeness and accuracy if the following points could be considered in future BURs: provide more information in accordance with decisions 2/CP.17 and 17/CP.8, as explained in paragraphs 40–43 above; cover the emissions of F-gases and international bunker fuels as much as possible, as described in paragraph 44 above; and move to higher-

tier methodologies for subcategories that have been identified as having a high priority, as mentioned in paragraphs 39 and 49 above;

(c) The National Green Growth Strategy and the Law on Energy Efficiency and Conservations have been implemented at the strategy and policy levels. No details on these initiatives and expected outcomes are reported. Currently, there have been no concrete mitigation actions in the form of NAMAs implemented in Viet Nam. Therefore, the achieved results are not reported in the BUR. However, Viet Nam has demonstrated that progress towards the implementation of the mitigation actions has been made. Nationally, the GHG emission intensity reduction target for 2020 is set at 8–10 per cent below the 2010 base year level. To achieve this goal, necessary enabling legal and policy frameworks and responsible agencies have been established. Viet Nam has identified the use of NAMAs as one of the key mechanisms to help achieve the mitigation goal. Various activities to establish an enabling environment for NAMAs have been conducted in Viet Nam. However, capacity related to developing proposals, implementing the mitigation actions, monitoring their progress and quantifying the effects is still limited;

(d) The Support Program to Respond to Climate Change in Viet Nam from 2009 gives a prioritization of actions. This allows clear identification of additional needs for funding to cover the gaps and constraints reported in the BUR and the requirements for the implementation of activities to address climate change, both in adaptation and mitigation.

72. The TTE, in consultation with Viet Nam, identified nine capacity-building needs related to the facilitation of reporting in accordance with annex III to decision 2/CP.17 and to the participation in ICA in accordance with annex IV to decision 2/CP.17, taking into account Article 4, paragraph 3, of the Convention. Key capacity-building needs prioritized by Viet Nam are summarized in chapter II.D above.

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# Annex

## Documents and information used during the technical analysis

### A. Reference documents

"Composition, modalities and procedures of the team of technical experts for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention". Annex to decision 20/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=12>.

"Modalities and guidelines for international consultation and analysis". Annex IV to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention". Annex III to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention". Annex to decision 17/CP.8. Available at <http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2>.

First biennial update report of Viet Nam. Available at <http://unfccc.int/8722.php>.

Second national communication of Viet Nam. Available at <http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php>.

### B. Additional information provided by the Party

The following documents were provided by the Party in response to technical clarification sought during the technical analysis:

Department of Meteorology, Hydrology and Climate Change. 2014. *National Inventory Report of Viet Nam*. Final draft.

Department of Meteorology, Hydrology and Climate Change. 2014. *Sectoral Table for the Energy Sector*.

Department of Meteorology, Hydrology and Climate Change. 2014. *Sectoral Table for the Industrial Processes Sector*.